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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,077	02/17/2004	Edward J. Fabian	03-379	1830

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900 CHAPEL STREET
SUITE 1201
NEW HAVEN, CT 06510

EXAMINER

HOLZEN, STEPHEN A

ART UNIT	PAPER NUMBER
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3644

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/781,077

Applicant(s)

FABIAN ET AL.

Examiner

Stephen A. Holzen

Art Unit

3644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-10, 12-16, 18 and 20-32 is/are pending in the application.
- 4a) Of the above claim(s) 23-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-10, 12-16, 18, 20-22, 29-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/28/2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).
2. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine the references comes from the knowledge generally available to one of ordinary skill in art.
3. In response to applicant's argument that CMT is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order

Art Unit: 3644

to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, CMT is reasonably pertinent to the particular problem with which the applicant was concerned.

4. The applicant should appreciate that www.wikipedia.org was not used to reject the claims. Wikipedia was use only to ^{clarify}~~clarify~~ the time which CMT Materials ^{had}~~had~~ been supplying polymer material for plug assist thermoforming. TL

5. Applicant has argued that Watkins is not available for prior art because the subject matter in the printed publication is not supported by 112 2nd in the provisional application. The examiner has reviewed the provisional application and asserts that the requirements of 112 2nd have been complied with. It should be noted that applicant has not provided any evidence to support the arguments made in this regard. Should applicant disagree with the examiner on this point, the applicant should provide evidence (not opinion) as to the merits of Watkins disclosure.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2-6, 14, 15, 18, 20-22, 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cundiff (6,156,146) in view of CMT Materials and further in view of Watkins

Art Unit: 3644

(2005/0095380) and further in view of 3M Corporation (Structural Core Splice Adhesive Film AF 3028) and further yet in view of Kay. (4,687,691).

Re – Claims 2-4, 6, 14, 15, 18, 20, 22, 29-32: Cundiff teaches:

- A core (12) formed from an open celled and thermally insulating material (Nomex or Fiberglass, see Col. 7, lines 60-065).

- The core is filled with a syntactic foam (see Col. 8, line 11 “SynSpand X9899”).

Applicant should appreciate that SynSpand X9899CF is an expanding syntactic film made by the Henkel Corporation. As evidence of this assertion the examiner refers applicant to the attached “Henkel” reference, which discloses, “SynSpand X9899CF is a medium density low exotherm expanding syntactic film suitable for core filling application. The low exotherm chemistry makes this product ideal for deep core fill.”

- The core has a first and second surface (see Figure 5).
- At least one ply of structural graphite prepreg material (16) bonded to each of said first and second sides wherein each ply is bonded by an adhesive film (14a, 14b).
- The primary requirement is that the cure temperature of the prepreg material should be the same as the cure temperature of the adhesive film. (See Col. 7, lines 62 – Col. 8, 1-9)

Cundiff does not teach:

- That the syntactic material is made from a fiberglass material.
- That the adhesive film is a 350° F curing epoxy structural film adhesive
- The Use of the composite on a helicopter.

Regarding Fiberglass Material Limitation

- CMT Materials, Inc. has been supplying syntactic and solid polymer material for plug assist thermoforming since at least November 25, 2002.¹ Syntactic Foams are known composite material synthesized by filing a metal, polymer or ceramic material with hollow particle called micro balloons. The presence of hollow particles results in lower density, higher strength, a lower thermal expanding coefficient.² (It should be understood that the examiner is not highly skilled in composite materials and therefore must rely upon the teachings from Wikipedia.org to determine what all Syntactic Foams are comprised. The examiner understands that the date of the Wikipedia.org evidence disqualifies it as prior art and therefore the examiner has cited CMT Materials, Inc. as evidence that the information contained in Wikipedia.org was known prior to the date of invention by applicant.)
- Syntactic foams can be modified by the addition of large diameter fiberglass or fiber-reinforced macrospheres.³ The examiner cites Watkins et al as evidence that

¹ http://web.archive.org/web/*/http://www.cmtmaterials.com/

² "Syntactic foam." Wikipedia, The Free Encyclopedia. 24 Jun 2006, 15:04 UTC. Wikimedia Foundation, Inc. 1 Aug 2006
<http://en.wikipedia.org/w/index.php?title=Syntactic_foam&oldid=60342711>.

³ "Syntactic foam." Wikipedia, The Free Encyclopedia. 24 Jun 2006, 15:04 UTC. Wikimedia Foundation, Inc. 1 Aug 2006
<http://en.wikipedia.org/w/index.php?title=Syntactic_foam&oldid=60342711>.

fiberglass macrospheres were a known type of syntactic foam component prior to the date of invention. (By at least May 16, 2003).

- Since Cundiff teaches using Syntactic foam to fill the honeycomb structure, and syntactic foams are known to be made from a fiberglass material (macrospheres) it would have been obvious to one having ordinary skill in the art to make the syntactic material from a fiberglass material, as taught by CMT Materials and Watkins et al, for the purpose of increasing thermal insulation properties. Furthermore it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose to make the syntactic material from a fiberglass material since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.
- It should be noted that Fiberglass macrosphere balls are capable of retarding fire.

350° F curing epoxy structural film adhesive

- This type of film is well known in the art. See for example “3M Scotch-Weld Structural Core Splice Adhesive Film AF 3028”. (The date of this publication is June 2002, as evidenced on the bottom right hand side of page 9). It would have been obvious to one having ordinary skill in the art, at the time the invention was made to choose to make the syntactic material from a fiberglass material for the purpose of filling mismatched areas and for further reinforcing the honeycomb core.
-

Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose to make the syntactic material from a fiberglass material since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

The Use of the composite on a helicopter

- Kay teaches that it is well known to manufacture aircraft (helicopters and airplanes) from composites materials (see Col. 5, lines 44-53). It should be appreciated that an aircraft is “A machine or device, such as an airplane, helicopter, glider, or dirigible, that is capable of atmospheric flight.”⁴ It would have been obvious to one having ordinary skill in the art to make aircraft components (helicopter components) from the composite materials defined by Cundiff and modified as done above, for the purpose of increasing passenger safety. Kay teaches that the top and bottom surfaces of the composite material can be used as exterior and interior surfaces of the craft. The examiner asserts that Kay teaches this concept since it is clear that at least a portion of one of the top or bottom surfaces forms the exterior surface of the helicopter structure (such as for instance the exterior of the fuselage). The opposite side (the upper side) would therefore be “interiorly” disposed relative to the exterior surface. It would have been obvious to one having ordinary skill in the art, at the time the invention

⁴ <http://www.answers.com/aircraft&r=67>

Art Unit: 3644

was made to manufacture the plurality of helicopter components from the claimed composite for the purpose of increasing pilot and crew safety.

- Re – Claim 5: Cundiff teaches that the plies are made from a graphite cloth a cured perform impregnated via the RTM method. (See Col. 1, lines 48-51; Col. 3, lines 50-53; see Col. 7, lines 62 – Col. 8, 1-9)
- Re – Claim 21: Kay teaches that aircraft and helicopter doors and fuselages can be made from composite materials.

8. Claims 7-10, 12, and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Cundiff as applied to claim 6 above, and further in view of ordinary skill in the art.

Initially, it should be noted that the examiner takes OFFICIAL NOTICE that

outer skin panel of a cockpit section,
upper cabin door in a cabin section,
a lower cabin door in a cabin section,
steps (see Ambrose et al 6,189,833),
an emergency egress hat in the cabin section,
upper door in a transition section

are all well known helicopter sections.

The examiner does not believe it necessary to provide a reference for each of these different embodiments. Applicant has not invented a helicopter platform. The core invention is

Art Unit: 3644

drawn to the material and not the location of the materials. Therefore the examiner takes OFFICIAL NOTICE that the above reference helicopter sections are well known in the art. It would have been obvious to one having ordinary skill in the art, at the time the invention was made to manufacture the plurality of helicopter components from the claimed composite for the purpose of increasing pilot and crew safety.

Alternatively, it is clear from Kay that composite materials can be used in a plurality of different locations on/within an aircraft (helicopter or airplane). The examiner asserts that the claimed location of the composite material do not define over the prior art because simply locating a known material in different parts of the aircraft would require only routine skill in the art. It would have been obvious to one having ordinary skill in the art, at the time the invention was made to manufacture the plurality of helicopter components from the claimed composite for the purpose of increasing pilot and crew safety.

Finally, it has been held that rearranging the parts of an invention involves only routine skill in the art. In re Japikse 86 USPQ 70. The location of the parts is an obvious design choice.

9. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cundiff as applied to claim 6 above, and further in view of ordinary skill in the art. Cundiff does not teach a plurality of plies of structural graphite prepreg bonded to each of said first and second surface by an epoxy structural film adhesive. Cundiff only teaches a single ply of structural graphite prepreg bonded to each of the first and second surface by an epoxy structural film adhesive.

Art Unit: 3644

The examiner asserts then that it would have been obvious to make the composite from a plurality of plies of structural graphite pregreg bonded to each of said first and second surface by an epoxy structural film adhesive since has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.* 193 USPQ 8.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

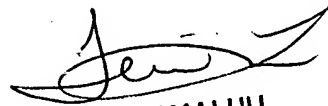
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen A. Holzen whose telephone number is 571-272-6903. The examiner can normally be reached on M-F 8:30-5:00.

Art Unit: 3644

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teri Luu can be reached on 571-272-7045. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Stephen Affel 1/25/07
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